

Remarks:

Reconsideration of the application is requested.

Claims 1-11 remain in the application. Claims 1, 6 and 8 have been amended. Claims 8-10 have been withdrawn from consideration.

In item 2 on page 2 of the above-identified Office action, the drawings have been objected to under 37 CFR 1.83(a) as not showing every feature of the invention specified in the claims.

More specifically, the Examiner has stated that the limitation "wherein the flowable material is silicone for forming structures on the support matrix" in claim 4 and the limitation "said groove is formed to extend into said bonding leads" in claim 7 must be shown or the feature(s) cancelled from the claims.

The limitation "said groove is formed to extend into said bonding leads" in claim 7 has been changed to "said groove is formed to extend toward said bonding leads". Figs. 3-4 have been added to clearly show the flowable material (12) such as silicone and the groove (7, 8) extending toward the bonding leads (5). The specification has been amended accordingly.

In item 4 on page 2 of the above-identified Office action, claim 7 has been objected to because of an informality.

More specifically, the Examiner has stated that "extend into said bonding leads" in claim 7 should be --extend toward said bonding leads--. The Examiner's suggested correction has been made.

In item 6 on pages 3-5 of the above-mentioned Office action, claims 1-3, 5-7 and 11 have been rejected as being anticipated by Wiech, Jr. (US Pat. No. 4,562,092) under 35 U.S.C. § 102(b).

The rejection has been noted and claims 1 and 6 have been amended in an effort to even more clearly define the invention of the instant application. Support for the changes is found in original claim 5.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claims 1, 6 and 11 call for, inter alia:

the barrier having a region with a parting agent disposed thereon for repelling the flowable material.

The Examiner has asserted that the reference sign 24 in Fig. 2 of Wiech, Jr. denotes a parting agent (see the fourth

paragraph on page 4 of the Office action). However, this assumption is in contradiction to the text in column 5, lines 34, 43 and 49 explicitly teaching that reference sign 24 denotes a conductive material, namely a metal line formed in the groove. As already explained in the second paragraph on page 6 and the first paragraph on page 7 of the response to the previous Office action, the conductive material 24 forms conductors rather than a parting agent.

Wiech, Jr. also does not suggest or provide any hint to use a groove filled with a parting agent for repelling a flowable material. The Examiner's interpretation contradicts the teaching of Wiech, Jr. For instance, Wiech, Jr. discloses in column 5, lines 38-45 that the grooves serve to obviate the need of electrically insulating the wire 3 and the conductive lines 24 from each other (see Fig. 2). The grooves only serve to provide a distance between the conductive lines 24 and the wire 3 crossing each other. Wiech, Jr. does not teach preventing any flowable material from creeping along the support matrix.

The flowable material mentioned in column 10, lines 44-46 of Wiech, Jr. in no way refers to preventing a lateral material flow along the support matrix surface. In contrast, it is explicitly disclosed in Wiech, Jr. that the substrate can be encapsulated, meaning that the substrate is completely covered

with the encapsulating material thereby isolating the substrate from any environmental influences (like moisture, for instance). The object of completely encapsulating a substrate from the environment and the object of selectively covering a portion of a substrate with a flowable material without covering other portions of the same substrate contradict each other. In Wiech, Jr., encapsulating the substrate of Fig. 2 means that the whole surface of the support matrix, including the grooves 10-14, will be covered with the encapsulating material. It is, therefore, not necessary in Wiech, Jr. to prevent the flowable material from flowing along the support matrix surface.

Clearly, Wiech, Jr. does not show the barrier having a region with a parting agent disposed thereon for repelling the flowable material, as recited in claims 1, 6 and 11 of the instant application.

Claims 1, 6 and 11 are, therefore, believed to be patentable over Wiech, Jr. and since claims 2-3, 5 and 7 are dependent on claims 1 or 6, they are believed to be patentable as well.

In item 8 on page 6 of the above-mentioned Office action, claim 4 has been rejected as being unpatentable over Wiech, Jr. in view of Roberts et al. (US Pat. No. 4,599,636) under 35 U.S.C. § 103(a).

As discussed above, claim 1 is believed to be patentable over the art. Since claim 4 is dependent on claim 1, it is believed to be patentable as well.

In addition, Roberts et al. also do not disclose any parting agent repelling a flowable material. According to column 8, lines 21-22 of Roberts et al., silicon is used as an encapsulation material, which is intended to completely isolate the substrate from environmental influences, rather than to achieve a selective application of an encapsulation material.

In view of the foregoing, reconsideration and allowance of claims 1-7 and 11 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out. In the alternative, the entry of the amendment is requested as it is believed to place the application in better condition for appeal, without requiring extension of the field of search.

Please charge any fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and

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Respectfully submitted,

  

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For Applicants

YHC:cgm

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Marked-Up Version of the Amended Paragraphs in the  
Specification and Marked-Up Version of the Amended Claims:

The paragraph starting on page 10, line 25 and ending on page 10, line 26 now reads:

Fig. 1 is a diagrammatic, plan view of a region of a support matrix according to the invention; [and]

The paragraph starting on page 11, line 1 and ending on page 11, line 2 now reads:

Fig. 2 is a sectional view taken along the line II-II shown in Fig. 1[.];

Claim 1(amended). A support matrix for integrated semiconductors, comprising:

a frame having at least one bonding channel with an edge formed therein, said frame further having a groove formed therein along said edge of said bonding channel;

conductor track structures disposed on said frame, said groove formed in said frame functioning as a barrier for preventing a flow of a flowable material from said bonding channel onto

said frame and onto said conductor track structures, said barrier having a region with a parting agent disposed thereon for repelling the flowable material; and

contacts, selected from the group consisting of bonding leads and wires, connected to said conductor track structures and disposed in said bonding channel; said contacts used for connecting said conductor track structures to an integrated circuit.

Claim 6 (amended). A support matrix for integrated semiconductors, comprising:

a frame having at least one bonding channel with an edge formed therein;

conductor track structures disposed on said frame, said frame and said conductor track structures having a groove formed therein along said edge of said bonding channel, said groove functioning as a barrier for preventing a flow of a flowable material from said bonding channel onto said frame and onto said conductor track structures, said barrier having a region with a parting agent disposed thereon for repelling the flowable material; and



contacts, selected from the group consisting of bonding leads and wires, connected to said conductor track structures and disposed in said bonding channel, said contacts used for connecting said conductor track structures to an integrated circuit.

Claim 8(amended). A method for producing a support matrix for integrated semiconductors, which comprises the steps of:

providing a frame having conductor track structures disposed thereon, at least one bonding channel formed in the frame, and bonding leads disposed in the bonding channel and connected to the conductor track structures for connecting the conductor track structures to an integrated semiconductor; [and]

forming at least one groove along an edge of the bonding channel for preventing a flow of a flowable material from the bonding channel onto the frame and onto the conductor track structures; and

placing a parting agent in the groove for repelling the flowable material.